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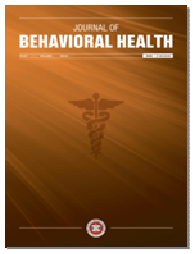

Original Research

The initiation and further progression of a physical activity referral scheme in a Swedish county 2001-2009

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Abstract

Several studies indicate that promotion of physical activity in health care settings is an underused method for promoting health in the population as well as for preventing and treating diseases. Physical activity referral schemes have been used as a method for activating patients. The aim of this study was to describe the development of prescribing physical activity in the county of Halland, Sweden from the start in 2001 until 2009. Data were obtained from the health authorities in the county of Halland on how many written prescriptions on physical activity were administered per clinic from 2005 until 2009. During 2008, the year when most prescriptions were written, data on how many doctors were employed in the primary health care were obtained. A mean value of five prescriptions per doctor was administered per year. There was no indication of a change in the number of prescriptions between 2005 and 2009. This study indicates that the overwhelming evidence for physical activity in prevention and treatment of diseases does not seem to be sufficient to convince health professionals to use physical activity referral schemes. It is thus vital that further research is performed on the barriers against prescribing physical activity and how to overcome these barriers.

INTRODUCTION

We know today that there is convincing evidence that physical activity generates health benefits [1]. A physically active lifestyle promotes both physical and mental health, increases quality of life and well-being while a sedentary lifestyle increases the risk for premature morbidity and mortality [1]. However, the main hindrance preventing an increase in the physical activity in the population is not a lack of evidence, but rather a lack of efficient methods for promoting physical activity among patients and the general population. For instance, the results of a study suggests that general practioners (GPs) have a good level of knowledge of the health benefits of regular physical activity and the levels required to achieve these, but do not promote activity in a way that will have impact on the population level [2].

Patients perceive physicians as highly credible sources of health information. This credibility extends to accepting physician-delivered prescriptions addressing physical activity or other preventive health activities [3, 4]. Many Swedish primary health care centers strive to go beyond basic medical care and provide patients with education, counseling and support programmes to bring about long-term improvements in, for example, smoking cessation, better nutrition and increased fitness [5]. Approximately two thirds of the population in Sweden will meet a doctor at least once during a twelve months period [6, 7]. This provides health care professionals with excellent opportunities for physical activity promotion. Written prescriptions or referring patients to other healthcare professionals varies greatly among and within various healthcare segments, but in general are not so common [5, 8]. The problem does not seem to be lack of knowledge of the importance of physical activity for preventing and treating various diseases but rather a lack of time to discuss and prescribe physical activity [9].

A method aiming for increasing physical activity in the population is written prescriptions for physical activity,

also called physical activity referral (PAR) schemes [10-12]. The term "exercise referral schemes" has been defined as: "an intervention where there is a referral by an appropriate professional to a service where there is a formalized process of assessment to that persons' need: the development of a tailored physical activity programme to meet that need; and monitoring of the individual's progress" [11]. The PAR concept was more broadly introduced in Sweden in the national campaign 2001 "Sweden on the move" [10, 12]. The method used in this campaign is called "individualized physical activity on prescription" (PAP). The first "PAP course" in the county of Halland for health professionals, i.e. doctors, nurses and physiotherapists, was held 11/9, 2001 (Personal communication, Sven Svensson, Sports Federation of Halland, 14/10, 2011). The PAR method is based on patient-centered counseling and includes an individualized written prescription of physical activity and an overall solution with supporting environment in the society [10]. Depending on the patients preferences and motivational level the prescription could either be to formal supervised group-based exercise or to more lifestyle-based physical activity or physical activity outside formal programmes. The patient-centered counseling often involves Motivational Interviewing, MI. This means that the PAR is prescribed after a discussion with the patient taking into account, for instance, the person's contemplation and self-efficacy. When used, referral schemes have been shown to be efficient, with only minor problems [13-17]. Unfortunately few health professionals use these methods to promote physical activity [5, 8]. Many general practioners in Sweden seem to use no structured method or not discuss physical activity at all (Personal communication, Sven Svensson, Sports Federation of Halland and Kent Nilsson, The Swedish National Institute of Public Health Personal communication, 16/1, 2012).

The aim of this study was to describe and analyze the use of the method of individualized physical activity on prescription by health professionals as a method for promoting physical activity in health care settings in the county of Halland, Sweden, from the start in 2001 until 2009.

MATERIAL AND METHODS

Data were obtained from the Halland county health authorities on how many written prescriptions for physical activity were administered per clinic from the start in 2001 until 2009. Due to missing data and poor quality of the data in the years 2001 - 2004 we started to report the data from 2005. Each of the municipalities in the county of Halland had a coordinator who collected the data. Data were also obtained in 2008 on how many doctors were employed in the primary health care in Halland. The number of doctors was used as a proxy for the number of health professionals being as data on the number of nurses and physiotherapists were not available. The number of prescriptions on physical activity in Swedish counties was obtained from The Swedish National Institute of Public Health 2010. The number of inhabitants in Sweden was obtained from Statistics Sweden 2010. A trend test for incidences based on Poisson distribution was used for analyzing the trend for prescription usage from 2005 until 2009.

RESULTS

The health professionals in the county of Halland were the second best county in Sweden in using the method of "physical activity on prescription" (Table 1). Prescriptions were administered to 631 men and 993 women in the county of Halland, Sweden, 2008, in total 1624 individuals of which 39 % were men and 61 % women. Twenty-three clinics (33 %) did not write any prescriptions (Figure 1). Forty-two clinics (61 %) administered ≤ ten prescriptions. Two clinics (3 %) administered more than 100 prescriptions. Thus, 25 clinics (36 %) administered between 11 and 199 prescriptions. A total of 322 doctors were employed in the primary health care services in the county. A mean value of five prescriptions per doctor was administered per year. There was no statistically significant trend of change in the number of prescriptions on physical activity from 2005 until 2009 (p=0.3; Figure 2). The trend of prescriptions for physical activity administered from 2001 until 2009 show an increase from 2001 until 2005 and thereafter a stagnation until 2009 (Figure 3). Being as there is no statistical trend for change between 2005 and 2009, the mean value 515 is used in figure 2 in order to provide a broad picture of the development from 2001 to 2009.

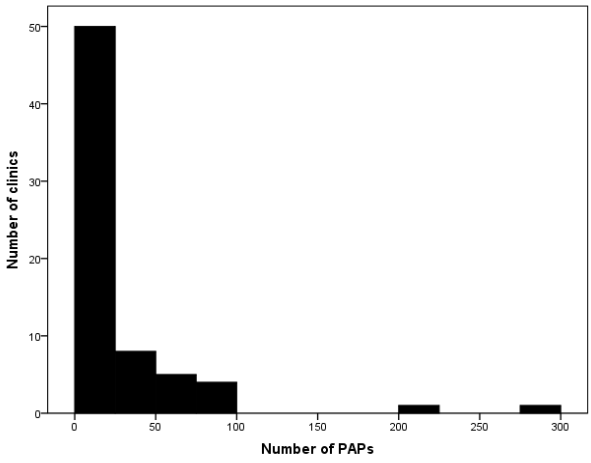

Figure 1. Number of recipes on physical activity (PAPs) (X-axis) given out per clinic (Y-axis) in the county of Halland, Sweden, 2008 (n = 69).

Table 1. Number of prescriptions for physical activity administered in Swedish counties 2008.

County	Number of prescriptions	Number of prescriptions per 100 000 inhabitants
Skåne	512	42
Norrbotten	203	81
Kronoberg	299	164
Stockholm	3 700	187
Jämtland	260	205
Örebro	885	319
Uppsala	1 100	336
Kalmar	800	343
Jönköping	1 377	411
Gävleborg	1 257	456
Värmland	1 295	474
Halland	1 667	568
Östergötland	2 895	684
Mean value	**1 270**	**349**

Data from the county health authorities of Blekinge, Dalarna, Gotland, Sörmland, Västerbotten, Västmanland and Västra Götaland are missing. Data was obtained from The Swedish National Institute of Public Health, 2010.

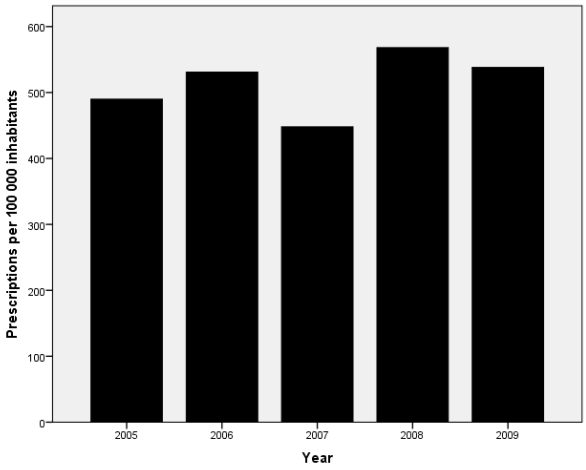

Figure 2. Number of prescriptions for physical activity administered per 100 000 inhabitants in the county of Halland, Sweden, from 2005 until 2009.

DISCUSSION

Due to missing data and poor quality of the data in the years 2001 - 2004 we started to report the data from 2005 (Personal communication, Sven Svensson, Halland Sport federation, 14/10, 2011). Nevertheless, there was an increase in prescribing PAP from the start 11/9 2001 until 2005 from zero to approximately 500 prescriptions per 100 000 inhabitants (Figure 3). The prescription rate then leveled off and reached a steady state level for the following five years (Figure 2 and 3).

In the year 2008, only a small minority of the clinics (3 %) used this method extensively, i.e. more than 100 prescriptions per year, and most clinics (61 %) rarely prescribed physical activity at all, i.e. less than ten prescriptions per year (Figure 1). On average five prescriptions per doctor and year were administered. This is most likely an overestimation of the true figure for doctors being as other health professionals, such as nurses, physiotherapists and dieticians are also allowed to prescribe physical activity. Also, the figures above indicate that there is a skewed distribution, i.e., many health professionals do not prescribe PARs at all and some few enthusiastic health professionals prescribe a lot of PARs. Nevertheless, these figures indicate that physical activity as a method for preventing and treating diseases is underused and that the majority of health professionals do not use the method "physical activity on prescription (PAP)". In Sweden approximately half of the population is overweight, i.e. a BMI above 25 [18]. Thus, most likely at least half of the population should benefit from following a PAP [14]. There are many reasons for the low prescription rate. GPs in Halland mention that they know the evidence for using physical activity for many conditions but the economic incentive to prescribe PAP is too small and priorities are given to acute problems and solutions (Personal communication, Sven Svensson, Sports Federation of Halland and Kent Nilsson, The Swedish National Institute of Public Health Personal communication, 16/1, 2012). Also in other countries there is widespread acceptance among general practioners that regular physical activity is conductive to good health [19, 20]. Internationally, lack of time and inadequate training are the most common barriers for physicians to counsel about physical activity [21-24].

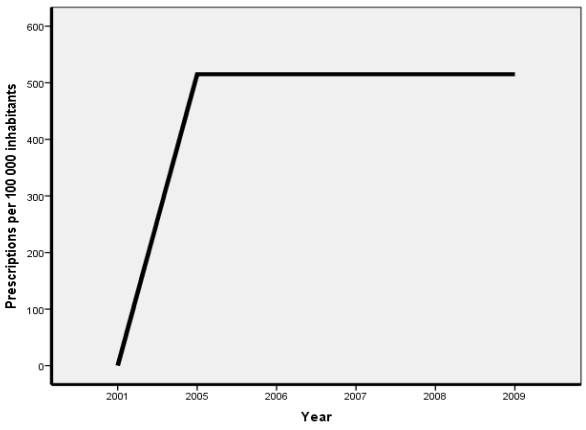

Figure 3. The trend of prescribing physical activity per 100 000 inhabitants in the county of Halland, Sweden, from 2001 until 2009.

One important question that this study raises is why does the trend of prescribing physical activity level off 2005 and reached a steady state level for the following five years, until 2009 (Figure 3)? Another important question is if it is possible to increase the number of prescriptions and reach a higher steady state level? Are we using the most efficient method (PAP) in order to promote physical activity? There is still insufficient evidence to determine that any method of promoting physical activity is superior to another [8, 25, 26]. It is thus important to conduct more randomized controlled trials and investigate if physical activity referral schemes lead to a more physically active lifestyle and to possible health benefits in order to determine whether physical activity on prescription is more effective than any other method. Furthermore, research aiming at increasing our knowledge of the factors that function as barriers and/or facilitators related to the implementation of physical activity on prescription is urgently needed in order to find out why the increase in prescriptions tailed off.

Data on which category of health professionals, such as general practioners, nurses and physiotherapists administering out prescriptions and for what reasons ought to be collected. Information on all diagnoses and treatments should also be monitored in order to be able to investigate if prescription on physical activity is optimally utilized.

Even though most clinics do not use PAP or rarely use PAP, the fact that at least some clinics used the method frequently (3 %) is encouraging (Figure 1). This thus means that some health professionals find the method attractive and that there is a potential for increasing the number of PAPs, and as a consequence of this the number of physically active patients. More research, especially qualitative research, including studies addressing differences between clinics and health professionals who use the PAP method and those who do not use it, ought to be performed in order to elucidate factors for success and failure for promoting physical activity among patients. The Swedish National Institute of Public Health is now launching a campaign (start 13/4 2012) to increase the number of PAPs. One strategy is to publish a book on the evidence for physical activity and PAP and how to prescribe PAP. Conference speakers stressed the importance of having education on PAP and the new "PAP book" in the curriculum of university health educations and also providing help to prescribe the first PAP. By prescribing the first PAP one important practical barrier is conquered.

One direction for future research could be to explore the reasons why the number of PAPs is as low as I have presented in this Swedish study. Perceived barriers, such as lack of time, could vary over time and between countries [2, 9, 27]. Therefore, the strategies to overcome these problems could as well vary over time and between countries. The focus for PAP should perhaps be on reducing the sedentary lifestyle, such as screen time, rather than promoting physical activity. This might be easier and more efficient. Various information technology-based concepts delivered by touch-screen computers and/or mobile phones could be useful in order to reach this goal. Different groups in society, such as disadvantaged groups, various ethnical groups etc. could be more or less prone to use these new strategies than other groups. A focus on a more physically active transportation to and from work and school should also be emphasized.

Information should be obtained regarding the usefulness of various physical activity referral schemes in different settings, such as various hospital wards, primary health care centers, schools, homes for the elderly, homes for individuals with severe mental disabilities etc. Multi-center studies would be useful in these cases. It is important to know that physical activity referral schemes really promote physical activity under real-world conditions. For instance, we need studies documenting patients' self-reported adherence as a primary outcome. A part of these studies should include health economy concerning costs and efficacy of various physical activity referral schemes. Even if PAP should be a success in increasing physical activity, we do not know its impact on health. In order to be able to know this we need studies with long follow-up periods (more than two years) and studies that allow separate analysis for various subgroups, such as women and men, various age groups, people with different health problems, socioeconomic status, ethnicity etc.

In conclusion, the overwhelming evidence for physical activity in prevention and treatment of diseases [1, 28] seems not to be enough to convince health professionals to use the method [2]. It is thus vital to elucidate what else other than evidence is needed in order to make staff use physical activity referral schemes as a tool for increasing physical activity among patients that should benefit from this. This report calls for strict well-designed studies with both high internal validity, such as randomized controlled trials, and high external validity, such as studies that show the effectiveness of promoting physical activity in everyday clinical practice, in order to make a useful method even more valuable.

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